

## OFFICER EDUCATION

Military instruction began at Cornell University in 1868 under the provisions of the Morrill Act of 1862. Since that time, officer education has been highlighted by the construction of Barton Hall in 1914 and the establishment of a formal Reserve Officers Training Corps (ROTC) unit in 1917. The program evolves to keep pace with the latest military changes and emphasizes the development of leadership and managerial skills.

The Officer Education Programs prepare students for a commission as an officer in either the United States Army, Navy, Air Force, or Marine Corps. Each service program is headed by a senior military officer who also serves as a full professor on the Cornell faculty.

### MILITARY SCIENCE

Lieutenant Colonel Brian Page, Professor of Military Science and Chair, 255-5651/-4000

Captain Lasher, Major Miller, Major Brown, Major Johnson, Major Fosdick

### United States Army ROTC Program

The primary objective of the Army Officer Education Program at Cornell is to commission the future officer leadership of the United States Army. Intermediate objectives are to provide students with an understanding of the fundamentals of responsibility, integrity, and self-discipline, as well as an appreciation of the citizen's role in national defense. The application of the decision-making process to a variety of situations is given major emphasis as a valuable aid in developing leadership potential. These objectives are achieved through a program covering 1.5 to 4 years. A two-year program is available for those who qualify. The program includes specific courses in military science, more general academic subjects that assure a well-rounded education, practical training in leadership through participation in the Cadet Corps (including attendance at one five-week summer camp at Ft. Lewis, Wash.), and the opportunity to participate in a number of extracurricular activities. This combination prepares the student for commissioning and effective performance in the many branches of the Army. The student's academic major, academic performance, leadership ability, personal desires, and the needs of the Army determine the branch of the Army into which the student is commissioned upon graduation.

### Requirements for Enrollment

All courses are open to enrollment without a military obligation with instructor permission. Applicants must be citizens of the United States and be able to obtain a Secret level security clearance before being commissioned as lieutenants. Noncitizens may enroll in courses but not commission. Students must meet Army medical requirements. Overall sound mental and physical condition is

essential; students are required to undergo periodic physical fitness tests. Enrollment and continuation in the program is subject to the approval of the Professor of Military Science. Enrollment in upper-division courses by students not formally enrolled in the program must be approved by course instructors. Contracted students must register for letter-grade military science classes and leadership laboratories for the purpose of commissioning after graduation into the United States Army.

### Four-Year Program

The Four-Year Program is open to students in their freshman and sophomore year. Veterans of the Armed Forces of the United States and students entering Cornell with AROTC credit from secondary or military schools (Junior Division AROTC) may receive advanced standing. Under the Four-Year Program students enroll in the Basic Course (MILS I and II) during the first two years, and the Advanced Course (MILS III and IV) during the next two years. A total of 12 credits of military subjects are taken. In addition, academic enrichment courses are required in such fields as written communications, computer science, and military history. All cadets attend a five-week Leadership Development and Assessment Course (LDAC), with pay, between their junior and senior years. All contracted cadets participate in physical fitness training three days per week. Each year selected cadets are sent to the Army Airborne School, Winter Survival School, and Air Assault Course, depending upon availability and student standings within the ROTC program.

### Scholarships

Scholarships are awarded on the basis of merit and may be available for 1.5 to 5 years. AROTC scholarships are awarded each year to entering freshmen and students in the freshman and sophomore classes. Scholarships pay full tuition and mandatory fees. Scholarship cadets and enrolled juniors and seniors also receive between \$300 and \$500 a month for up to 10 months a year. Scholarship cadets also receive \$1,200 per year toward the cost of textbooks.

### Service Obligations

ROTC graduates may serve on active duty, in the Army Reserve, or in the National Guard, depending upon the needs of the Army and the cadet's request. Officers beginning active duty attend the OFFICER BASIC LEADERSHIP COURSE II/III (normally 10 to 16 weeks) of their assigned branch. Upon completion, officers are assigned to a unit and location determined by the desires of the individual and the requirements of the Army. Officers selected for reserve duty attend the OFFICER BASIC LEADERSHIP COURSE II/III, after which they are released to reserve status.

ROTC graduates have the option of serving four years on active duty and four years in inactive reserve status; however, some may serve eight years on reserve duty.

### Graduate Study

Graduate students are allowed in the program. Active duty deferments, or educational delays, may be granted to individuals who want to attend graduate school at their own expense. Requests will be considered on the basis of the needs of the service. Admission to graduate school is the student's responsibility.

### Military Science Courses

All cadets take one course and a leadership laboratory each semester in military science. The number of hours a week spent in the classroom varies from semester to semester, as does the credit received for each course. Additionally, cadets work out from 5 to 6 p.m. three days a week.

### Freshman Year (MILS I)

#### MILS 1101 Foundations of Officership

Fall. 1 credit. Required. C. McFall. Students examine the U.S. defense structure in terms of organization, mission, personnel, and relationships among and between military forces and branches and departments of the government. The U.S. Army force structure is examined at all levels. The complexities and magnitude of operating the defense organization are studied to provide a framework for subsequent instruction. Students develop skills in conducting oral and written presentations.

#### MILS 1102 Foundations in Leadership

Spring. 1 credit. Required. J. Lasher. Allows students to develop a basic understanding and appreciation of theories of social and organizational psychology and behavior as they apply to the military setting. Attention is given to leader types, the source and exercise of authority, and the impact of varying styles of leadership, resource management, motivation, and organizational effectiveness. The student is instructed in the concepts of integrity, ethics, and professionalism. Classes on historical events and strategy are also presented.

### Sophomore Year (MILS II)

#### MILS 2201 Individual Leadership Studies/Teamwork

Spring. 1 credit. Required. B. Miller. Students learn the basic principles of group dynamics at the level of the smallest military unit, the squad. Troop-leading procedures are introduced through case studies and role-playing exercises. Leadership theories introduced in MILS 1102 are examined in a variety of realistic settings. The practical application of behavioral theories is explored in the context of small military organizations. The course also provides practical knowledge of the various forms of topographic representation. Students use maps in terrain association and land navigation. Knowledge of topography is complemented by an orientation on significant environmental influences of physical, social, and climatic factors. Portions of the course offer experience in land navigation and orienteering.

**MILS 2250 Basic Mountaineering Course**

Fall and spring. 1 credit. Open to all students; limited to 20 per sec. Two 1-hour sec: M or R 9-9:50, Barton Hall G-1.

Climbing wall fee: \$20. B. Page.

This course instructs techniques for students to cope with mountainous terrain. It discusses and instructs in basic techniques including rappelling, survival, acclimatization, illness and injury, equipment, anchors, evacuation, movement, safety, and training.

**MILS 2260 Basic Orienteering**

Fall. 1 credit. Open to all students; limited to 20. R 9-9:50, Barton Hall G-1. M. Hart.

This course instructs the principles of orienteering including basic map reading, terrain association, and compass skills. Course running techniques are applied in field orienteering events. Instruction includes safety and survival in hot and cold weather environments.

**MILS 2270 Basic Rifle Marksmanship**

Fall. 1 credit. Open to all students; limited to 15. W 9-9:50, Barton Hall G-16. Fee for upkeep of systems: \$20. M. Hart.

This course instructs the principles of rifle and pistol safety including marksmanship fundamentals, range procedures, safe weapons handling, and target engagement. Students will use state-of-the-art digital weapons engagement systems as well as real weapons.

**MILS 3321 Armed Conflict in Society**

Fall. 2 credits. Required. B. Miller.

Provides practical knowledge in American military history. It is primarily an overview course designed to provide an understanding of the art and nature of warfare and particularly how warfare has affected the United States. The course consists of three primary areas of instruction with an emphasis on American military history. The first area of instruction addresses the art and theory of modern warfare. It analyzes America's first attempt at war, the American Revolution, and ends with the development of modern warfare under Napoleon Bonaparte. The second phase focuses on America at war in the 19th century. It places particular emphasis on the American Civil War and the strategy of annihilation versus the strategy of attrition. The final phase looks at warfare in the 20th century and finishes with an analysis of the future of warfare for the military of the United States.

**Junior Year (MILS III)****MILS 3301 Leadership and Problem Solving**

Fall. 2 credits. Required. R. Brown.

After an initial introduction to techniques of presenting briefings, students are provided with a broad understanding of the principles and application of teamwork in military organizations. Particular emphasis is given to the leadership responsibilities of the commander as the team coordinator. This course helps students develop an understanding of the roles and contributions of the various branches of the Army in support of the military team.

**MILS 3302 Leadership and Ethics**

Spring. 2 credits. Required. R. Brown.

Takes on the nature of decision making and the tactical application of the military team. Through the use of conferences and extensive practical exercises, students develop familiarity with the factors influencing a leader's decisions and the process of planning,

coordinating, and directing the operations of military units through operation plans and orders.

**Senior Year (MILS IV)****MILS 4401 Leadership and Management**

Fall. 2 credits. Required. B. Page.

Provides an overview of the functions, responsibilities, and interrelationships among small-unit leaders, the commander, and the staff. Discussions focus on actions of small-unit leaders, communication skills, army operations, the logistical support of the army in the field, and the army training system. The course focuses on the dynamics of leadership in battle through the detailed analysis of a series of case studies. Just war theory, ethics, and professionalism are also addressed in a seminar fashion.

**MILS 4402 Officership**

Spring. 2 credits. Required. B. Page.

A continuation of MILS 4401. Conferences and seminars examine the techniques of effective military leadership, with special attention given to professionalism and ethical considerations in the armed forces during both peacetime and conflict. Army operations and basic doctrine are also discussed. This is a capstone course designed to prepare the student for commissioning.

**Practical Leadership Training****All Army Officer-Education Students**

No credit is given for leadership training, but participation is required for successful completion of the AROTC program. Students receive physical education credit for the laboratory. Each semester, cadets register for the appropriate leadership laboratory, consisting of physical fitness training three times per week, two hours of military training each week, and one weekend training exercise per semester.

**MILS 1111 Leadership Laboratory I**

Fall, spring. 0 credits. S-U.

MILS I cadets meet for two hours each week to learn a variety of military skills including rappelling, first aid, drill and ceremonies, weapons familiarization, and physical fitness training.

**MILS 2211 Leadership Laboratory II**

Fall, spring. 0 credits. S-U.

Cadets meet for two hours each week as members of the cadet organization to participate in practical leadership exercises. Types of practical activities include rifle marksmanship, orienteering, drill and ceremonies, signal communications, physical fitness training, first aid, tactics, and field exercises.

**MILS 3311 Leadership Laboratory III**

Fall, spring. 0 credits. Required. S-U.

Cadets meet for two hours a week and occasional weekends to prepare for a five-week summer camp that follows their junior year. Emphasis is placed on the development of individual practical and leadership skills. Cadets rotate through leadership positions to practice applying decision-making skills in a myriad of situations.

**MILS 4411 Leadership Laboratory IV**

Fall, spring. 0 credits. Required. S-U.

Senior cadets plan and operate the leadership laboratory programs for MILS I-III cadets. The development of planning and supervisory

skills is emphasized. Cadets have an opportunity to practice leadership skills developed during previous ROTC training and summer camp experiences. Includes two to three hours a week devoted to physical fitness.

**Professional Military Education (PME) Requirements**

In addition to the ROTC classes and leadership laboratories listed above, a number of courses are required as part of the contracted student's academic program. These courses are offered by the university and round out the student's professional education. The PME component of the ROTC program requires at least one college course in each of the following areas: communication skills, military history, and an introduction to computers. These courses must be completed before graduation and commissioning. Courses that meet these requirements are approved by the Professor of Military Science.

**NAVAL SCIENCE**

Captain James Nault, United States Navy, Professor of Naval Science and Commanding Officer, Naval ROTC Unit

Lieutenant Colonel David Taylor, United States Marine Corps

Lieutenant Matthew Zarracina, United States Navy

Lieutenant Douglas Raineault, United States Navy

Lieutenant Reginald Preston, United States Navy

The objective of the Naval Reserve Officers Training Corps Education Program is to prepare students for service as commissioned officers in the United States Navy or United States Marine Corps. This is accomplished by supplementing undergraduate education with instruction in essential concepts of naval science and by fostering qualities of leadership, integrity, and dedication to country. The program is compatible with most undergraduate major fields of study, including five-year baccalaureate degree programs.

The program covers four years and combines specific courses in naval science and specified academic subjects. These courses supplement weekly professional development sessions in which the practical aspects of naval science and leadership procedures are stressed. It also includes at least one summer-at-sea period.

Though the Navy-Marine Corps Program has been designed to prepare future officers, naval science courses are open to all students at Cornell as space limitations allow.

**Requirements for Enrollment**

An applicant for the Naval ROTC program at Cornell must be a citizen of the United States. Applicants must have reached their 17th birthday by June 30 of the entering year and be less than 27 years of age on June 30 of the calendar year in which they are commissioned. Waivers of the upper age limit may be available for applicants who have prior active duty military service. Applicants must also meet physical and medical requirements. Interested students can visit the Naval ROTC Unit in Barton Hall or contact their local officer recruiter.

## Programs

There are two programs: the Scholarship Program and the College Program. The two programs differ primarily in benefits given to the student.

### Scholarship Program

The Scholarship Program provides approximately 1,000 scholarships in more than 70 universities nationwide to selected students who want to serve in the Navy or Marine Corps. Financial support is provided to students during college preceding the award of the baccalaureate degree.

### Benefits

The program offers scholarships that provide full tuition and are not need-based. While on scholarship, students also receive money for instructional fees, textbooks, nonconsumable supplies, and a stipend of \$250–\$400 a month for a maximum of 40 months.

Successful completion of the Scholarship Program leads to a commission in the Navy or Marine Corps Reserve. At Cornell University, over 90 percent of NROTC students have a scholarship. Students entering NROTC without a prior scholarship award are entitled to compete for two- or three-year scholarships controlled by the Chief of Naval Education and Training.

### Entering the Scholarship Program

There are three ways to enter the Scholarship Program:

1. by applying to the national competition each year. This process entails filling out and submitting an appropriate application; being interviewed; having a physical examination; and applying to, and being accepted by, one of the colleges or universities throughout the country that offers an NROTC program.
2. by enrolling in the College Program at Cornell and being recommended by the Professor of Naval Science for a scholarship after at least one semester in the program.
3. by entering through the Two-Year Scholarship Program.

### College Program

Two College Programs are available. Both lead to a commission in the Naval or Marine Corps Reserve.

Starting in the junior year, each of these programs provides textbooks for naval science courses, uniforms, and a subsistence allowance of \$350–\$400 a month.

The regular College Program is four years long. Academic requirements for students in this program are somewhat fewer than those for scholarship students, as noted in the curriculum section of this book.

The Two-Year College Program begins the summer before the junior year; students attend a required program, with pay, at the Naval Science Institute in Newport, R.I.

### Summer Training

Each summer, students in the Scholarship Program spend approximately four to six weeks on a Navy ship, or participate in a naval activity that may take place anywhere in

the world, for on-the-job training. College Program students attend one summer training session of the same duration between the junior and senior years.

### Active Duty Requirements

Scholarship midshipmen commissioned in the Navy or Marine Corps Reserve serve on active duty for a minimum of four years. College program midshipmen commissioned in the Naval or Marine Corps Reserve serve a minimum of three years. In some cases, following commissioning, specialized training such as aviation or nuclear power will add additional active duty requirements.

### Choice of Assignment

Graduates have the opportunity to request the duty they prefer upon graduation. These requests are given careful consideration, and every effort is made to assign newly commissioned officers to their duty of choice.

Among the assignments available are duties in naval aviation as either a pilot or naval flight officer, on submarines, and on surface ships. Other specialties, such as special warfare or medical service corps, may be available on a limited basis.

### Marine Corps Options

The United States Marine Corps is an integral part of the Naval Services and is commanded by the Commandant of the Marine Corps. One-sixth of the NROTC scholarship students may be Marine selectees who will be designated Marine-option midshipmen. Upon successful completion of the program they will be appointed second lieutenants in the United States Marine Corps.

Marine-option midshipmen follow the same program as other NROTC midshipmen for the first two years. Beginning with the junior year, Marine-option midshipmen are taught Marine-oriented courses by a Marine Officer Instructor. For First Class summer training (after the junior year), Marine-option students travel to Quantico, Va., where they undergo six weeks of intensive training known as the USMC Officer Candidate School. Upon commissioning the following year as second lieutenants, they are assigned to the Basic School at Quantico, Va. After the Basic School, the Marine officer is assigned duty in a variety of occupational fields. Among the duties available are infantry, aviation, artillery, tracked vehicles, engineering, communications, electronics, supply, administration, and computer science. The officer may serve on board naval vessels or at shore installations of the Marine Corps or Navy, either in this country or overseas.

The Marine Corps has a postgraduate training system similar in objectives and organization to that of the Navy. Marine officers selected for aviation receive flight training at the Naval Air Station, Pensacola, Fla., along with their Navy counterparts.

### Curriculum

A student has three categories of requirements to fulfill as a midshipman. The first of these requirements is a weekly naval professional development session each semester. The second requirement is a naval science course each semester. The last set of requirements consists of further courses prescribed by the

Navy to meet the growing need for more and better technically educated junior officers.

### Naval Professional Laboratories

#### NAVS 1141, 2241, 3341, 4441

All students in the program participate in a two-hour professional development session each week. The session is held from 2:30 until 4:30 on Wednesday afternoons and consists of drill, athletics, and professional information events. Students gain experience in actual leadership situations and learn the fundamentals of seamanship, military formations, movements, commands, discipline, courtesies, and honors. During information briefings, special emphasis is given to applied leadership as it relates to the administrative and managerial aspects of a Navy or Marine Corps officer's duties.

### Naval Science Courses

All Navy and Marine midshipmen take one naval science course each semester during their freshman and sophomore years. Navy-option students continue to take a naval science course each semester during their junior and senior years. Marine-option students have slightly different curriculum requirements for their junior and senior years.

#### Freshman Year (Navy and Marines)

##### NAVS 1101 Fundamentals of Naval Science

Fall. 0 credits. M. Zarracina.  
Involves a study of fundamental aspects of naval science. This includes contributions to sea power, different warfare communities involved in the physical development of naval forces, and study of resource management and naval science prospects for the future. Naval uniforms, customs, and traditions are also covered.

##### NAVS 1102 Sea Power and Maritime Affairs

Spring. 3 credits. M. Zarracina.  
Discussions examine the history of the Navy as a force in diplomacy and an instrument of U.S. foreign policy. Relationships between Congress and the military for determining the national defense policy are also explored. An integrated examination of current events and issues lends historical perspective throughout the course.

##### NAVS 1480 Small Boat Sailing (also PE 1480)

Fall and spring. Physical education credit. Instructor TBA.  
This is a course of instruction in basic sailing skills and safety principles. Students sail small boats on Cayuga Lake. Focus is on U.S. Navy Class B inshore skipper certifications.

#### Sophomore Year (Navy and Marines)

##### NAVS 2201 Leadership and Management I (also HADM 1115)

Fall. 3 credits. J. Nault and D. Taylor.  
The theme of the course is the "evolving role of the manager, organizational decision maker, and leader." The course begins by briefly covering the theoretical principles of management and progresses through practical skills used by managers and leaders. Lectures, reading assignments, films, and discussions provide students with an excellent opportunity to consider complex managerial and leadership issues. The goal of this course is for students to begin to develop a sound



personal leadership philosophy that will enable them to more effectively accomplish the assigned responsibilities of leading men and women in today's demanding and high-tech naval environment.

#### **NAVS 2201 Naval Ship Systems I (also MAE 1110)**

Fall. 3 credits. R. Preston.  
Introduces primary ship-systems and their interrelationships. Basic principles of thermodynamics, propulsion, mechanical operation, internal communications, electronics, ship structure, and other marine systems are covered.

#### **Junior Year (Navy)**

##### **NAVS 3050 Navigation (also BEE 3050)**

Spring. 4 credits. D. Raineault.  
Introduces the fundamentals of marine navigation emphasizing piloting and electronic navigation procedures. Covers coordinate systems, chart projections, navigational aids, instruments, compass observations, time, star identification, use of the nautical almanac, and study of tides and currents. Electronic navigation systems are discussed.

##### **NAVS 3302 Naval Operations**

Fall. 3 credits. D. Raineault.  
Covers the application of the nautical rules and maneuvering board in order to avoid collisions at sea. Other aspects of naval surface ship operations that are introduced include visual and electronic communications methods, tactical disposition of forces, ship handling theory, and deck seamanship topics.

#### **Senior Year (Navy)**

##### **NAVS 4401 Naval Ships Systems II (Weapons)**

Spring. 3 credits. R. Preston.  
Examines the principles and theories used in the development of naval weapons systems. Initially, extensive study is made of detection systems, especially radar and sonar, followed by discussions of ancillary systems for computing, stabilizing, tracking, and weapons control and delivery.

##### **NAVS 4402 Leadership and Ethics**

Spring. 3 credits. J. Nault.  
Reviews a variety of topics important to the naval officer for both professional and managerial development. The material is designed to provide the midshipman with an understanding and appreciation of leadership and ethics in preparation for assignments in the naval service. Through the use of lectures, case studies, and role-playing, the student learns various aspects of naval leadership and ethical decision making. Marine-option students may also take this course.

#### **Junior or Senior Year (Marine Options)**

##### **NAVS 3310 Evolution of Warfare**

Spring. 3 credits. D. Taylor.  
A study of warfare that examines the relationship of military strategy to geography, economics, sociology, technology, and governing policy. This course examines the historical evolution of warfare, including principles of war, development of weapons and their effects on warfare, and the political goals associated with specific adversaries through history.

##### **NAVS 4410 Amphibious Warfare**

Spring. 3 credits. D. Taylor.  
The history of the development, theory, techniques, and conduct of amphibious operations from 490 bc to the present. Special emphasis is placed on amphibious operations conducted in the central Pacific during World War II and on the future of amphibious operations.

#### **Other Required Courses**

##### **Navy-Option Scholarship Program**

To be eligible for a commission in the United States Navy, midshipmen must successfully complete all the requirements for a baccalaureate degree in any field of study offered by Cornell University, and complete courses in the following subjects (specified courses to be approved by the Professor of Naval Science):

American military affairs or national security policy (one semester)

English (one year)

calculus (one year)

calculus-based physics (one year)

world cultures/regional studies (one semester)

The calculus requirement must be satisfied by the end of the sophomore year and the physics requirement by the end of the junior year.

Although free choice of academic majors is permitted, students are encouraged to pursue majors in engineering and the physical sciences so that they may be best prepared to meet the technological requirements of the modern Navy.

##### **Navy-Option College Program**

Navy-option College Program students must complete one year of college-level study in mathematics, physical science, and English as a prerequisite for commissioning. The mathematics course must be completed by the end of the junior year; the physical science course by the end of the senior year. In addition, one semester of computer science is required. College Program students who desire entry into the Navy-option Scholarship Program should fulfill all of the requirements applicable to Navy-option scholarship students if they wish to be eligible for a scholarship controlled by the Chief of Naval Education and Training.

##### **Marine Option**

Any midshipman, in either the Scholarship Program or the College Program, who completes all of Cornell University's degree requirements in any academic major is eligible for a commission in the U.S. Marine Corps or U.S. Marine Corps Reserve. Marine-option students take the same naval science courses and naval professional laboratories as Navy-option students for the freshman and sophomore years. During the junior and senior years, Marine-option students have slightly different naval science course requirements than their Navy-option counterparts. Two semesters of courses (a minimum of 3 hours each) in the area of American Military Affairs or National Security Policy are required. One semester of a modern foreign language must be completed.

#### **Extracurricular Activities**

The NROTC midshipman at Cornell is offered a broad range of activities, including sail training and a comprehensive intramural sports program. Midshipmen participate in a myriad of social events, including the annual Navy/Marine Corps Birthday Ball.

#### **DEPARTMENT OF AEROSPACE STUDIES**

Lieutenant Colonel James Blair, United States Air Force, Professor of Aerospace Studies and Commander, Air Force ROTC Detachment 520

Captain Misty Johnson, United States Air Force, Assistant Professor of Aerospace Studies and Commandant of Cadets, Air Force ROTC Detachment 520

Captain Phillip Ulmer, United States Air Force, Assistant Professor of Aerospace Studies and Unit Admissions Officer, Air Force ROTC Detachment 520

The objective of the Air Force Officer Education Program at Cornell is to prepare men and women for positions as officers in the United States Air Force. The program is designed to teach students about the mission and organization of the Air Force, the historical development of airpower, leadership, and management. Students study national security policy and the role of the military in a democratic society. This program includes specific courses in aerospace studies and practical leadership laboratories. Additionally, the Department of Aerospace Studies seeks to inform and engage noncadet students about the U.S. military, in general, and the USAF, in particular.

#### **Requirements for Enrollment**

The Air Force Officer Education Program is open to any qualified undergraduate or graduate student enrolled in any major field of study. Though the program is designed to prepare future Air Force officers, academic courses in the Department of Aerospace Studies are open to all students at Cornell without incurring any military obligation. An applicant must be a United States citizen to become a commissioned officer. Noncitizens may enroll and will receive certificates acknowledging completion of the course but cannot receive a commission. U.S. permanent residents who are naturalized by their date of graduation may receive a commission.

All applicants receive physical examinations at no cost and must meet certain physical requirements to be accepted. Students who are interested in qualifying for flying categories (pilot, navigator, or air battle manager) must meet more stringent physical requirements. In addition, students enrolled in the commissioning program must meet specified physical fitness requirements each semester.

#### **Four-Year Commissioning Program**

The Four-Year Program is open to all qualified freshmen. Sophomores and juniors may also enter a condensed version of the four-year program with the approval of the department head. Many students join the program after the first semester of their freshman year. If interested, contact the department for details.

Veterans of the U.S. armed forces, students entering Cornell from military schools, or high school students with documented Junior ROTC or Civil Air Patrol involvement may receive advanced academic standing, subject to approval by the Professor of Aerospace Studies.

The Four-Year Program consists of a two-year General Military Course (GMC) program of study followed by a two-year Professional Officer Course (POC) program of study. For four-year scholarship cadets, the first year of the GMC carries no military commitment, and students may withdraw at any time. Entry into the POC does carry a military commitment. For nonscholarship cadets, both years of the GMC carry no military commitment, and students may withdraw at any time.

### General Military Course

Students in General Military Courses (GMC) take a 1-credit Aerospace Studies course each semester. During the freshman year, the student examines the organization and mission of the United States Air Force and the environment of the Air Force officer. In the sophomore year, the student studies the history and development of American air power. In both years, officership and professionalism within the United States Air Force are emphasized.

Students also spend two hours a week in a leadership laboratory. Leadership laboratories provide cadets with an opportunity to put into practice the skills they have learned in their aerospace studies classes. These laboratories focus on the development of officer qualities through activities such as drill and ceremonies, group leadership problems, confidence-building exercises, and guest lecturers. Students who intend to continue on into the Professional Officer Course and pursue a commission will participate in summer field training for four weeks between their sophomore and junior years; some students may complete field training between their junior and senior years.

### Professional Officer Course

The Professional Officer Courses (POC) provide a two-year advanced program of instruction. Each cadet accepted into the POC must sign an agreement to complete the program and accept, if offered, a commission in the United States Air Force upon graduation. Completing the GMC program of study is not required for POC entry. Many students join the program after their freshman year. Contact the Department of Aerospace Studies for details.

Classroom study in the POC is a 3-credit course each semester. In the junior year, cadets study Air Force leadership and management at the junior officer level. During the senior year, cadets study the elements of national security and the military's role in American society. Leadership laboratory requires two hours a week in the junior and senior years. In leadership laboratory, cadets are exposed to advanced leadership experiences and apply principles of leadership learned in the classroom.

### Two-Year Commissioning Program

The Two-Year Program consists of the last two years of the regular Four-Year Program plus a five-week summer training course.

The Two-Year Program is open to all qualified students with two years of academic study remaining. Graduate or undergraduate entry into this program depends on the needs of the Air Force. Many students join the program after their freshman year. Interested students should contact the department for information.

### Scholarships

The Air Force offers three- and four-year scholarships to high school seniors and one-, two- and three-year scholarships to college students. Four-year scholarships are offered on a competitive basis to high school seniors. Scholarship information can be obtained from a high school guidance counselor, from Air Force ROTC officers at Cornell (AFROTC phone number is 607-255-4004), from a local Air Force recruiter, via the web at [www.afrotc.com](http://www.afrotc.com), or from the Air Force ROTC scholarship section, Maxwell AFB, AL 36112-6106, 334-953-2869. The deadline for submitting a four-year scholarship application is December 1 of the year preceding the academic year in which a student wants to enter the program. Students should apply early.

#### Scholarships for two and three years.

Applications for these scholarships should be made to the Professor of Aerospace Studies during the freshman, sophomore, or junior years of college. All selections are based on the student's major, scores achieved on the Air Force Officer Qualifying Test, the student's overall grade point average, and the recommendation of the Professor of Aerospace Studies. Scholarships include amounts ranging from \$3,000 per year to full tuition and fees. There is a monthly \$300-\$500 nontaxable allowance during the school year. A \$900 per year textbook allowance is included in every scholarship. Scholarships do not include the cost of room and board. All AFROTC scholarships are merit-based, not need-based.

### Fees

An initial uniform deposit of \$50 is required on entry into AFROTC. Before commissioning, cadets may purchase uniforms with their deposit or return uniforms and receive their deposit back.

### Benefits

All cadets in the advanced program—whether they are on scholarship or not—receive a \$450-\$500-a-month, nontaxable subsistence allowance during the academic year. During the four- or five-week summer field training (see below), each cadet receives a pay allowance plus an allowance for travel to and from the field site. Textbooks and supplies required for Department of Aerospace Studies courses are provided.

All cadets are eligible to participate in AFROTC-sponsored field trips made to Air Force bases throughout the country as well as voluntary summer programs for professional development. Scholarship and POC cadets are entitled to space-available travel on Air Force aircraft flying within the continental United States.

### Field Training

Two types of field training are available: a four-week course for cadets in the Four-Year Program and a five-week course for Two-Year Program applicants.

Field training is designed to stimulate the development of military leadership skills through meaningful experiences. The curriculum consists of aircraft, aircrew, and survival orientation; junior officer training; physical training; small arms training; team building and leadership training. The five-week training program includes 60 hours of Air Force ROTC academic course work that substitutes for the freshman and sophomore Aerospace Studies courses. Cadets are evaluated for their officer potential at field training.

Cadets may also volunteer for one of many Advanced Training Programs. These programs can include but are not limited to the Air Force Academy Free-Fall Parachute Training, Technical Research and Development Internships, the Academy Soaring Program, Special Operations Training, and language and cultural immersion programs.

### Commissioning Obligations

All students who successfully complete the AFROTC advanced program must be awarded a baccalaureate degree before receiving their commission. They then enter the Air Force as second lieutenants.

Second lieutenants commissioned in nonflying categories are required to serve on active duty for four years. Pilots are required to serve on active duty for 10 years after completing flying training. Navigators and Air Battle Managers serve eight and six years respectively after completing training.

### Air Force Careers

The Air Force assigns new officers to a career field based on mission requirements, educational background, and officers' preferences. Students in the engineering-scientific category may be assigned to practice in their specialty in research and development, communications, electronics, aeronautics, astronautics, the biological sciences, computer design and maintenance, meteorology, space, or other engineering and scientific fields. Graduates in the nontechnical category can anticipate assignments in manpower management, information management, logistics, law enforcement and investigation, intelligence, personnel, public affairs, transportation, accounting and finance, and other career fields. Specializations for language and cultural studies majors are also available.

Any undergraduate major is suitable for those who are qualified and interested in entering the space and missile career fields or in becoming pilots, navigators, or air battle managers. After completion of flying training, personnel are assigned to a specific type of aircraft.

### Curriculum

Students in the Four-Year Program are required to take all courses listed below. Students in the Two-Year Program are required to take all of the courses listed for the junior and senior years. There are no prerequisites for any Aerospace Studies courses.

**Freshman Year****AIRS 1161 The Foundations of the United States Air Force I**

Fall. 1 credit. P. Ulmer.

This is a survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer career opportunities, war and the American military, and Air Force heritage. Leadership laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences.

**AIRS 1162 The Foundations of the United States Air Force II**

Spring. 1 credit. P. Ulmer.

Continuation of AIRS 1161. Topics include Air Force core values, human relations, team building, communication skills, and officer leadership.

**Sophomore Year****AIRS 2211 The Evolution of USAF Air and Space Power I**

Fall. 1 credit. J. Blair.

This course is designed to examine general aspects of air and space power through a historical perspective. The course covers a time period from the first balloons and dirigibles to the role of air power in the Korean conflict. Historical examples are provided to illustrate the development of Air Force capabilities and functions to demonstrate the evolution of what has become today's USAF air and space power. The course examines several fundamental truths associated with war in the third dimension, and provides students with an understanding of the general element and employment of air and space power from an institutional, doctrinal, and historical perspective. In addition, students continue to discuss the importance of the Air Force core values.

**AIRS 2212 The Evolution of USAF Air and Space Power II**

Spring. 1 credit. J. Blair.

Continuation of AIRS 2211. This course covers the role of airpower from Vietnam to the present day. Attending AIRS 2211, while helpful, is not required to take AIRS 2212.

**Junior Year****AIRS 3331 Air Force Leadership Studies I**

Fall. 3 credits. P. Ulmer.

This course is a study of leadership required of an Air Force junior officer; it has applicability to any entry-level professional as a junior executive. The course investigates theories and styles of leadership, power and influence, the meaning and function of followership in the military context, critical thinking, problem solving and team building, group conflict management, situational leadership, and management functions and principles. Films and case studies are used for analysis of theories and principles studied. Students receive instruction and practice effective writing (e.g., background and position papers) and briefing skills (e.g., informative and advocacy briefings) for professional communications; students practice both modes of communication. The course also provides professional officer education in terms of defining professional

and unprofessional relationships, working with civilian personnel, and the profession of arms. The course is open to any student. For officer candidates, a mandatory leadership laboratory complements this course.

**AIRS 3332 Air Force Leadership Studies II**

Spring. 3 credits. Open to any student. P. Ulmer.

A continuation of AIRS 3331. The course investigates advanced skills in leadership: dynamic subordinacy, effective supervision, essentials of counseling, corrective supervision, professional authority, responsibility, and accountability. The course also investigates the meaning and application of ethical and moral leadership, professional officer ethics, military ethics in joint operations, and the core values of the Air Force. Film and case studies are used for analysis of course content. Written and briefing practice continues. For officer candidates, a mandatory leadership laboratory complements this course.

**Senior Year****AIRS 4401 National Security Affairs/Preparation for Active Duty I**

Fall. 3 credits. M. Johnson.

This course is concerned with the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Other topics include the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Continued emphasis is given to refining communication skills. A mandatory leadership laboratory complements this course by providing advanced leadership experiences, giving students the opportunity to apply the leadership and management principles described in this course.

**AIRS 4402 National Security Affairs/Preparation for Active Duty II**

Spring. 3 credits. M. Johnson.

Continuation of AIRS 4401.

**Leadership Laboratory Courses**

All Air Force cadets spend two hours a week throughout the academic year in a leadership laboratory. Occasionally laboratories are held at times other than the normally scheduled period. All cadets are expected to participate in a formal dinner and to meet minimum physical fitness and weight standards each semester. Leadership lab is open to students qualified to compete for an Air Force commission.

**AIRS 1141 Initial Military Experiences**

Fall and spring. 0 credits. Required. S-U grades.

Introduction to the responsibilities, life, and work of an Air Force officer. Basic knowledge of drill and ceremonies, military courtesies, and the wearing of the uniform. This course includes a field trip to a local military installation.

**AIRS 2241 Intermediate Military Experiences**

Fall and spring. 0 credits. Required. S-U grades.

Designed to help students develop skill in giving commands for drill and ceremonies. Students are also introduced to the Air Force base environment in which the officer functions. Career areas available based on academic majors are described. Students

participate in military drills and ceremonies and go on a field trip to a local military installation.

**AIRS 3341 Junior Officer Leadership Experiences**

Fall and spring. 0 credits. Required. S-U grades.

Cadets assume leadership responsibilities similar to those of a junior officer. Emphasis is on the importance of applying effective human relations skills in dealing with superiors, peers, and subordinates. Cadets also gain insight into the general structure and progression patterns of selected Air Force officer career fields.

**AIRS 4441 Advanced Leadership Experiences**

Fall. 0 credits. Required. S-U grades.

Cadets assume command leadership responsibilities to operate a military organization. Cadets apply effective leadership and managerial techniques with individuals and groups and participate in self-analysis of leadership and managerial abilities.

**AIRS 4442 Precommissioning Laboratory**

Spring. 0 credits. Required. S-U grades.

Factors that facilitate transition from civilian to military life are reviewed. The need for military security, base services and activities, personal finances, travel regulations, and social obligations are introduced.